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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,524	03/25/2004	Hidehiro Ogawa	119241	5555
25944	7590	09/19/2007	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320				WANG, KENT F
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/808,524	OGAWA ET AL.
	Examiner	Art Unit
	Kent Wang	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 March 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) 8-16 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-7 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 30 November 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 11/30/2004.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I claim 1-7 in the reply filed on 08/01/2007 is acknowledged. The traversal is on the ground(s) that the search and examination of the entire application could be made without serious burden. This is not found persuasive because these subcombinations are distinct and they do not overlap in scope and are not obvious variants. Please refer to the different classes and subclasses as shown in the restriction requirement mailed on 07/11/2007. The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The reference listed on the disclosure statement (IDS) submitted on 11/30/2004 and 11/30/2004 have being considered by the examiner (see attached PTO 1449).

Drawings

4. The drawings are objected to because labeled elements "TO S105 IN FIG. 5" in Figure 10, "FROM S104 IN FIG. 4" in Figure 11, and "R > FOURTH PREDETERMINED VALUE" in

Figure 13 have been mislabeled. The labeled element “TO S105 IN FIG. 5” should be changed to “TO S105 IN FIG. 11”, labeled element “FROM S104 IN FIG. 4” should be changed to “FROM S104 IN FIG. 10” (see page 43, lines 7-13) and the labeled element “R > FOURTH PREDETERMINED VALUE” should be changed to “R ≥ FOURTH PREDETERMINED VALUE” (see page 54, lines 13-17). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. The table below shows just a few of the many minor errors through the specification:

Page no	Line no	Mislabeled character	Corrected character
15	24	FIG. 2	FIGS. 2A and 2B
16	2	FIG. 2(a)	FIG. 2A
17	20	FIG. 2	FIGS. 2A and 2B
20	4	FIG. 4	FIGS. 4A and 4B
20	11	FIG. 4(a)	FIG. 4A
20	18	FIG. 4(a)	FIG. 4B
49	25	unit 21	unit 421
51	8	display panel unit 21	display panel unit 421
54	16	step S3014	step S304
62	23	display panel unit 21	display panel unit 421

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5 and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Higuchi, US 2001/0008424.

Regarding claim 1, Higuchi discloses a power system comprising:

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- a battery unit (a battery pack 1, Fig 1) that includes a battery (a battery cell 20, Fig 1) ([0030]); and
- an apparatus main body (a video camera 60, Fig 1) that operates on power supplied from the battery (a battery cell 20) in the battery unit (a battery pack 1) mounted thereat, the battery unit (a battery pack 1) and the apparatus main body (a video camera 60) being engaged in information exchange (communication circuits 65 and 72, Fig 1) ([0029], [0030]), wherein:
 - a work volume value (residual battery capacity) indicating a volume of work that the apparatus main body (a video camera 60) has been engaged in is transmitted from the apparatus main body (a video camera 60) to the battery unit (a battery pack 1) over a predetermined cycle (charging/discharging cycles of the battery cell) ([0029] and [0071]);
 - the battery unit (a battery pack 1) calculates a cumulative work volume value of the work volume value (calculates the current residual battery capacity) at the apparatus main body (a video camera 60) and stores the cumulative work volume value (current residual battery capacity stores in non-volatile memory 17, Fig 7) therein, and the battery unit (a battery pack 1) also detects a consumed battery capacity value indicating an extent to which a battery power has been consumed (battery cell voltage detection information) at the apparatus main body (a video camera 60) ([0029]-[0030] and [0071]);
 - the cumulative work volume value (residual battery capacity), the consumed battery capacity value (calculates the current residual battery capacity) and a

charged battery capacity value (charging/discharging current detection information) are transmitted (sent via the communication circuit 72) from the battery unit (a battery pack 1) to the apparatus main body (a video camera 60) over the predetermined cycle (charging/discharging cycles of the battery cell) ([0029]-[0030]); and

- the apparatus main body (a video camera 60) displays a battery use rate indicating an extent to which the battery has been used based upon the consumed battery capacity value (current residual battery capacity) and the charged battery capacity value (charging/discharging current detection information), and also displays the cumulative work volume value (current residual battery capacity) at the apparatus main body (a video camera 60) ([0029]).

Regarding claim 2, Higuchi discloses a power system wherein:

- different operating modes (mode input device 69, Fig 1) of the apparatus main body (a video camera 60) are classified in correspondence to varying levels of power consumption(level of the charging current) ([0066]-[0067], and [0088]);
- work volume values (residual battery capacity) each corresponding to one of the operating modes (normal operational mode or power saving mode) are transmitted (sent via the communication circuit) from the apparatus main body (a video camera 60) to the battery unit (a battery pack 1) ([0030]);
- the battery unit (a battery pack 1) calculates and stores (calculates the current residual battery capacity, [0029];current residual battery capacity stores in non-volatile memory, [0071]) therein cumulative work volume values corresponding

to the individual operating modes (normal operational mode or power saving mode) of the apparatus main body (a video camera 60) and transmits (sent via the communication circuit) the cumulative work volume values corresponding to the individual operating modes to the apparatus main body (a video camera 60) ([0029] and [0071]); and

- the apparatus main body (display device 64,) displays the battery use rate (residual battery time) and the cumulative work volume values (residual battery capacity) corresponding to the individual operating modes (normal operational mode or power saving mode) of the apparatus main body (a video camera 60) (Fig 11 and [0078]-[0080]).

Regarding claim 3, Higuchi discloses a power system wherein:

- the battery unit (a battery pack 1) allows the battery (a battery cell 20) to be charged with a charge apparatus (charging/discharging current detection circuit 80, Fig 1) ([0030]);
- the battery unit (a battery pack 1) and the charge apparatus (charging/discharging current detection circuit 80, Fig 1) exchange information with each other (information generating circuit 71, Fig 1; [0030]); and
- the cumulative work volume value (residual battery capacity) stored in the battery unit (a battery pack 1) is reset to 0 (minimum usable voltage is fixed) when the battery has been charged by the charge apparatus (charging/discharging current detection circuit 80, Fig 1) ([0037]-[0040], and Fig 3).

Regarding claim 4, this claim recites same limitations as claim 3. Thus it is analyzed and rejected as previously discussed with respect to claim 3 above.

Regarding claim 5, Higuchi discloses a power system wherein:

- the battery unit (a battery pack 1) allows the battery (a battery cell 20) to be charged with a charge apparatus (charging/discharging current detection circuit 80, Fig 1) ([0030]);
- the battery unit (a battery pack 1) and the charge apparatus (charging/discharging current detection circuit 80, Fig 1) exchange information with each other (information generating circuit 71, Fig 1; [0030]); and
- the battery unit (a battery pack 1) detects the charged battery capacity value (charging/discharging current detection information) and transmits the detected charged battery capacity value to the charge apparatus (charging/discharging current detection circuit 80) ([0030]-[0033]);
- the charge apparatus (charging/discharging current detection circuit 80) makes a decision based upon the charged capacity value (charging/discharging current detection information) transmitted from the battery unit (a battery pack 1) as to whether or not (intuitive visual indication of the ratio in percentage of the current residual battery time) the battery is in a fully charged state and ends a charge of the battery once the battery is judged to be in the fully charged state ([0035]); and
- the battery unit (a battery pack 1) resets the consumed battery capacity value (residual battery capacity) stored in memory (non-volatile memory 17, Fig 7) at

the battery unit to 0 (minimum usable voltage is fixed) when the charge of the battery ends ([0037]-[0040], and Fig 3).

Regarding claim 7, Higuchi discloses the apparatus main body is a camera (a video camera 60); and the work volume value is a length of time over which the camera has been engaged in use (residual usable time of the video camera, in other words, the usable residual service life of the battery) ([0033]).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Higuchi in view of Niikawa, US 6,710,809.

Regarding claim 6, Higuchi discloses the apparatus main body is a camera. Higuchi does not explicitly disclose the work volume value is a number of frames of images photographed in the camera.

Niikawa discloses the work volume value is a number of frames of images photographed in the camera (displays an available photographing number, see col. 13, lines 61-67 and Figs 10-11, Niikawa).

Thus, it would have been obvious to one of ordinary skill in the art to have included the battery-driven electric equipment as taught by Niikawa into Higuchi's electronic apparatus, as to provide an electric equipment including a digital camera in which a battery can be effectively consumed while keeping the battery life as long as possible and capable of ascertaining with ease the remaining work volume and the remaining work time available in an apparatus which operates on battery power (see col. 2, lines 26-29, Niikawa).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Aranovich (US 6,363,146) discloses a reset device which prevents power oscillation and system damage and allows trickle charging of the rechargeable battery in the dormant mode and rapid charging in the active mode.
- Miki et al. (US 6,101,339) disclose a camera and a system that exploit a secondary battery to eliminate the use of components and also eliminate the risk of malfunction such as wire breakage.
- Nishimura (US 2002/0171755) discloses a battery property judging circuit measures a voltage of battery before and while a zoom motor is operated respectively.

Inquiries

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Wang whose telephone number is 571-270-1703. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

- a. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8300.
- b. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KW
6 September 2007



NGOC YEN VU
SUPERVISORY PATENT EXAMINER